Supporting Evidence-Based Practices and Standardization of Care through Implementation of Outpatient, Emergency Department, and Hospital COVID-19 Order Sets in a Large Healthcare System

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In March 2020 the coronavirus (SARS-CoV-2) pandemic which causes COVID-19 disease was making its way across the globe and had begun to spread in the United States. In preparation for the impending public health crisis, the Baptist Health South Florida Antimicrobial Stewardship Program (BHSF ASP) personnel reflected upon the Center for Disease Control and Prevention's (CDC) Core ASP Principles and took note of emerging literature related to the role of antimicrobial stewardship in COVID-19 preparation and response (Centers for Disease Control and Prevention, 2019; Sanchez et al., 2016; Stevens et al., 2020). This led to the development of a multi-faceted ASP COVID-19 strategy including consideration for drug shortages, diagnostic stewardship, guideline creation, emerging investigational therapeutics, education, and monitoring of local practices.

During this time, a role for outpatient, emergency department (ED), and hospital COVID-19 order sets was identified, which we aim to describe here. Order sets are electronic forms which can be tailored to the needs of a patient with a specific diagnosis and enable clinicians to select orders from a pre-populated list. To develop and implement COVID-19 order sets, an interdisciplinary approach was taken including the key element of connecting with the BHSF Evidence Based Clinical Care (EBCC) leadership. The BHSF EBCC provides structure and guidance to the organization in the design, adoption and implementation of relevant and upto-date synthesized research based clinical pathways and protocols that can be measured in real time across the entire patient episode of care; in order to eliminate clinical variation, improve patient safety, and reduce costs.

Following a rigorous development process that included input from operational leadership, clinical specialists, nursing, informatics, and others, the BHSF COVID-19 outpatient (Figure 1), ED (Figure 2), and hospital COVID-19 order sets went live in mid-March of 2020. This was approximately the same time at which initial businesses began closing and educational facilities closed in state of Florida. The order sets included sections such as general guidance, lab, radiology, nursing, respiratory, intravenous fluids, supportive medications, and consults. Commentary was included within the order set to provide guidance to clinicians on strategies recommended by CDC on the appropriate care of patients with COVID-19. For example, in the intravenous fluids section the statement "consider limiting use of IVF (which can exacerbate acute respiratory distress syndrome) unless otherwise indicated" was included. As the pandemic has progressed and additional literature and best practices have emerged, the order sets have been updated. As with the development and implementation of the order sets, changes have been reviewed then facilitated by a multidisciplinary group.

Data indicate the COVID-19 order sets have served as a useful tool for BHSF providers. From March 18th through July 15th of 2020 the COVID-19 Power Plans were used 8,556 times (3,464 in outpatient setting, 2,106 in the emergency department setting, and 2,986 in the inpatient hospital setting). Urgent care providers have utilized the

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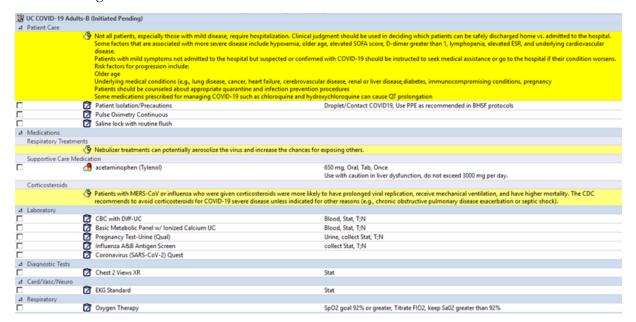
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Figure 1.

COVID-19 Urgent Care Power Plan



outpatient power plan the most, emergency medicine providers have used the ED power plan most frequently, and hospitalists have used the hospital power plan the greatest number of times.

Through engaging a multidisciplinary group we have been able to standardized and evolve evidence-based practices that are widely utilized within our healthcare system during a pandemic event. We believe this has been an important endeavor to support our clinicians as they provide the highest standard of care for patients during these unprecedented times. Through this work we have also strengthened our relationships within the organization, working as a team and combining our knowledge to develop high quality products. We take great pride in the work happening at BHSF and while there will surely be new challenges ahead, we are confident that together we can overcome any obstacle and meet the healthcare needs of our community.

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DECLARATION OF INTEREST

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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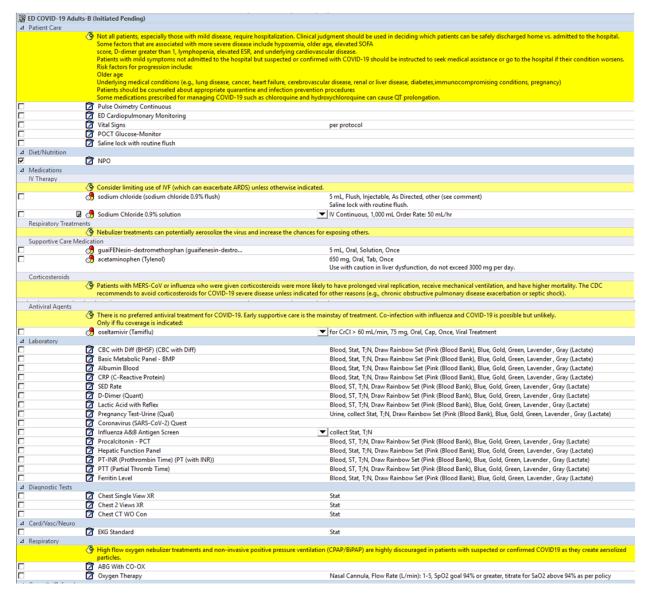
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Figure 2.

COVID-19 Emergency Department Power Plan



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